THE HEALTH EDUCATION JOURNAL

53	Editorial	
55	The New Outlook in Mental Health	Doris M. Odlum
63	Prescribing for Health	
78	Surveys of Knowledge, Habits and Attitudes	Čenek Adamec
86	Smoking and Lung Cancer : The Middlesex Approach	A. C. T. Perkins
94	Anthropology in Health Education	Saleem A. Farag
100	Fluoridation and the Waterworks Engineer	J. R. Collins
106	Reviews	

VOLUME XVIII MAY, 1960 NUMBER 2

The Central Council for Health Education

THE HEALTH EDUCATION JOURNAL

Editor : DR. A. J. DALZELL-WARD

Assistant Editor : M. TAYLOR

Published by

THE CENTRAL COUNCIL FOR HEALTH EDUCATION

TAVISTOCK HOUSE, TAVISTOCK SQUARE,

LONDON, W.C.1.

Publications Officer : MRS. W. E. DUNCAN

Founded 1927 *Incorporated* 1936

The Central Council for Health Education accepts no responsibility for the views expressed by contributors to The Health Education Journal. *The material is copyright, and enquiries regarding reproduction from this issue, whether in whole or in part (except for quotation), should be addressed to the Editor.*

The HEALTH EDUCATION JOURNAL and the HEALTH INFORMATION DIGEST are published at two-monthly intervals, the Journal appearing in March, May, September and November, and the Digest in January and July. Subscription 20s. ($3.00) a year, post free, for the six issues. Separate issues 3s. 6d. ($0.60) each, except for special numbers which are 5s. ($0.80).

Editorial

Research in health education tends to be a little vague and we have encountered some difficulties in the past when faced with critics who are more familiar with experimental or fundamental research. Not only has it been difficult to explain the method used, but also the purposes for which information is required. The article by Dr. Perkins (page 86), should settle any such doubts. This describes the project undertaken by the Health Education Officer of Middlesex County Council (Mr. Penn) on the question of the attitude of school children to smoking. The use of the discussion method, employing the tape recorder, the creation of a permissive atmosphere, and the extraction from the groups of practical ideas for the production of new educational materials, are all classical techniques of health education, and it is encouraging to see them put into effect in familiar Middlesex rather than hearing about them from remote regions of Africa. What is remarkable is that Mr. Penn came to the conclusion that about 75% of young people could be persuaded to stop smoking—or not to start—leaving a hard core of 25% of young people of school age in whom any reasoning would fall on deaf ears.

We would welcome this project on three scores. It is an admirable demonstration of the work and function of a Health Education Officer. It gives us a clear guide on what kinds of technique are most effective with school children—and it is a clear directive to go ahead with the t ‘cs of making the facts about smoking known to all school children.

Dr. Bothwell's[1] work seems to suggest that the primary school is the target, since the motivation in these children is curiosity rather than the complicated prestige motives of adolescents. The writer of this article has also drawn attention to the importance of family practices, the fact that the mother smoked being of greater significance than that the father smoked. If this is so, then surely our educational efforts must include parents as well as children. The literature on smoking behaviour is growing and most of it shows a consistency of findings which is encouraging. What health

[1]Bothwell, P. W. "The Epidemiology of Cigarette Smoking in Rural School Children." *Medical Officer*, 11th September, 1959. 125-32.

education will make of Professor Eysenck's[1] latest paper on personality and smoking is another matter. If smoking habits are related to personality type, is this operative in children? It is obvious that whoever takes up this task will have to be well informed on all aspects before he can begin.

[1]Eysenck, H. J. et al. "Smoking and Personality." *British Medical Journal*, 14th May, 1960, 1456-60.

THE NEW OUTLOOK IN MENTAL HEALTH

By DORIS M. ODLUM, M.A., M.R.C.S., L.R.C.P., D.P.M.

THERE is a tendency to lament the passing of "the good old times" and to think that all the changes in the modern world have been for the worse. But for many people they were bad old times, and that especially applied to the mentally ill or handicapped. For them the changes have undoubtedly been for the better. During the past twenty years, at any rate, there has developed a much more understanding and compassionate attitude towards the individual who is suffering from disorder of the mind or disturbances of the emotions and even for those who, as a result of these conditions, show deviations of behaviour.

We have, however, a long way to go before we finally liberate ourselves from the archaic outlook which equated mental disorder with sin, and which was tinged with the mediaeval idea that mental illness was quite different from physical illness and had some mystic and even magical qualities. These false ideas gave rise to irrational fears and produced an attitude of hostility towards those who were afflicted. It is only in very recent times that we have dared to draw aside the veil of secrecy and mystery, and to try to bring the problems of mental illness into the light of reason and scientific research.

In consequence of this we are to-day beginning to accept mental disorders of all kinds as not essentially different from physical disorders, to recognise them as illnesses whose character and even causation we can to some extent define and for which we are evolving methods of prevention and treatment which are already having a considerable measure of success. In consequence of this the attitude of society, and also of the medical and nursing professions, is changing from one of rejection and hostility to a desire to understand and help the mentally ill and try to rehabilitate them in the community. This is a tremendous advance on our former method of dealing with the mentally handicapped, which

was simply to segregate them in custodial care and as far as possible to forget their existence.

It is almost incredible to-day that prior to the passing of the Mental Treatment Act of 1930—only 30 years ago—it was not possible for patients to be admitted to a mental hospital for treatment, however willing they might be, unless their illness had progressed to such a serious degree that they could be certified as of unsound mind. This made it quite impossible for early or preventive treatment to be undertaken in a great many cases, with the consequence that those people who could have been saved by treatment at an early stage frequently received no treatment at all until their illness was so firmly established that they had little or no hope of recovery. Since that date, however, the proportion of those who go to mental hospitals at an early stage of their illness, and of their own free will, has increased so dramatically that in some of the more advanced mental hospitals there are practically no certified patients. The fact that people could be treated in the early stages acted as a tremendous incentive to research in methods of treatment and completely revolutionised the whole atmosphere in mental hospitals in this country. The standard of medical and nursing care have been steadily improving, in spite of the quite inadequate number of doctors employed in mental hospitals and the acute difficulty of obtaining nurses to care for the mentally ill.

During the war years and for some time thereafter, it was impossible to make any great advance, but in the last five years many of the old mental hospitals have been almost transformed from the gloomy, prison-like institutions that they formerly were into active centres of treatment whose object is the rehabilitation of the patients and their restoration to normal living in the community. The physical treatments now available and the considerable advances that have been made in the use of drugs, especially for disturbed and aggressive patients and those suffering from severe depressions ; the treatment of patients by direct psychotherapy, either individually or in groups ; and the establishment of teams of doctors and nurses, social workers and occupational therapists doing intensive work with small groups of patients : all these have proved extremely rewarding. Moreover, the mental hospital is no longer cut off and isolated from the life of the community as it used to be. For example, in many areas associations of friends of the mental hospital have been established to provide visitors for those patients who have no relatives or friends available. This has been a godsend, especially to many of the

older patients who felt rejected and abandoned and had lost all hope of establishing any contact with the normal world. In such cases progressive mental deterioration was almost inevitable. Many hospitals now hold open days when visitors are welcome. Patients are encouraged to take part in every kind of social activity within the hospital and to occupy themselves in a large variety of ways. Social workers help them with their family and employment problems and every effort is made to prepare them to leave the hospital and to re-establish themselves in the outside world as soon as they are capable of doing so.

After-care

Up to the present time there has been great difficulty in re-establishing patients after they leave the hospital, and one of the sad results of this has been the high percentage of relapses. There is no doubt at all that a great many of these could be prevented if there were adequate after-care facilities, including some form of half-way house, sheltered occupations and social clubs where the patients could gradually find their feet and adapt themselves to the strains of normal community living. Above all, relatives need to be helped and advised in regard to their treatment of the discharged patient.

When we realise that the total of mental illness of all kinds in the community probably exceeds considerably the total of physical illness, and also that nearly half the hospital beds in the community are occupied by patients suffering from some sort of mental disorder, we see that this is a major health problem and that it should have priority in our thinking and planning, not only in the interests of the individual sufferers but also of the well-being and stability of the whole nation.

It was a growing realisation of the importance of the problems involved that led to the appointment of the Royal Commission on Mental Health, which issued a most far-seeing and even revolutionary report in 1958. This has been followed with gratifying speed by the passing of the new Mental Health Act, which received the Royal assent in the summer of 1959 and will be gradually coming into effect during 1960.

The basic principle underlying the Commission's report, and reflected in the Act, is the need for early and preventive treatment of all forms of mental illness or mental handicap insofar as is possible in the community, and also for after-care facilities, so that hospitalisation is only resorted to when necessary and only for as

long as is necessary. Hospitals should have the highest standards of treatment available and adequate medical and nursing staff to carry out active treatment of every type, the object being to reduce the period of stay in hospital to the minimum and to return the patient to the community at the earliest possible moment. This will necessitate the provision of really adequate preventive and after-care services in the community. These will have to be provided by the Local Health Authorities, acting closely in co-operation with general practitioners and the welfare and education services. They can most valuably be supplemented by the work of voluntary associations, some of which have already done extremely important pioneer work in this field, such as the National Association for Mental Health and the Mental After-care Association.

In order that these services may operate satisfactorily it will be necessary to educate the public and to give them a greater understanding of the ways in which they can help. Perhaps the most important thing of all is to make people realise that mental health is everyone's concern, and that we are each of us responsible for the mental as well as the physical welfare of those among us who are suffering or handicapped in mind, body or estate.

The New Act

In the new Act all forms of mental illness and subnormality are included in the term mental disorder. It is perhaps advisable at this point to stress the difference between mental illness and mental subnormality, a distinction which is not always fully understood.

There are many forms of mental illness, just as there are many forms of physical illness. A person who has hitherto been quite normal and healthy may at some stage in life develop a severe mental or physical illness from which he may or may not recover either completely or partially. Most forms of mental and physical illness are possibly preventable, the large majority can be treated, and in a great many cases recovery is possible and does occur. In mental illness today the recovery rate is approximately 30 per cent.

Mental subnormality, however, is quite a different matter. It results from a failure of the brain to develop to full maturity. The degree of failure can vary from something so slight that the individual is more or less able to live an independent existence in the community, to such severity that the individual is quite incapable of looking after himself in any way or even of protecting himself

from simple physical dangers. The condition may arise through some form of failure in the development of the brain, which occurs either at the time of conception or during pregnancy and is irreversible and inevitable ; or it can arise from severe birth injury to the brain ; or as a result of some subsequent disease which affects the brain during childhood or in early adolescence, before it has attained to its full development. Such cases were common after the epidemic of sleepy sickness (encephalitis lethargica) which occurred in the 1920's.

The mentally subnormal, who have been popularly termed mental defectives, cannot by any form of treatment become fully mature people, and those who are more seriously affected must in many cases be completely protected during the whole of their lives, either by their families or in some kind of institution. The intermediate grades, especially those who are approximating to the normal, can benefit enormously by training and by being encouraged to use such mental capacities as they possess and, for a great many of these, institutional care is not necessary or even desirable. What are required are much better facilities for providing this training and education in the community, and for helping parents to manage and cope with their mentally defective children in their homes. There is, however, a residuum who must inevitably spend a part, or possibly the whole, of their lives in some form of residential care either in small groups or in colonies.

Up to the present time certain hospitals have been designated, that is to say, approved by the Ministry of Health for the care and treatment of patients who are either mentally ill or mentally subnormal. The method of admission to the hospitals for the mentally ill was either by application on the part of the patient, who had to sign a form agreeing to enter the hospital for treatment on the condition that he could leave after giving 72 hours' notice in writing of his intention to do so ; or alternatively, if the patient were too ill to express his willingness or unwillingness, he could be taken to the hospital at the request of a relative and with the certificates of two doctors. In cases where the patient was severely ill, but completely unwilling to go to hospital or have any kind of treatment, a specially appointed person called the Duly Authorised Officer could arrange for him to be taken to hospital, either as an emergency measure or with a certificate signed by one doctor and an order signed by a magistrate. This normally had to be accompanied by an application for his admission (called a petition) from the nearest relative. These roughly, with certain modifications

for special cases, were the only methods of admission to a designated mental hospital. According to the Act there will cease to be any designated hospitals, and any patient who wishes to go for treatment can be admitted without any formality and can leave without any formality, just as in any hospital dealing with physical diseases.

Patients who require hospitalisation for their own sakes or that of others, and who are unwilling to go to hospital, can be taken there by arrangement with the Duly Authorised Officer with two certificates provided by doctors and an application by the nearest relative. One of the doctors should be the general practitioner who usually looks after the patient and the other a specially approved doctor with some experience in mental illness. In cases of emergency one medical certificate is adequate for a few days' stay. Patients can be admitted for 28 days for observation, or for a period of treatment not exceeding a year. They will then be permitted to leave hospital only if the doctors and the board of management feel that they are sufficiently well to do so, or if the relative who applied for their admission applies for their discharge and undertakes all responsibility for their care, provided that they are not considered to be a danger to themselves or to others. This will completely do away with a magistrate's order, and thus the admission of a mentally ill patient to hospital will depend entirely on medical opinion and not on legal process, in the same way as admission to a hospital for physical illness. It is hoped and believed that this will tend to do away with the stigma that the public attach to the idea of legal detention of a patient in a mental hospital through the intervention of a magistrate.

In the case of a mentally subnormal person where hospitalisation is regarded as advisable or necessary, rather similar procedures will obtain. It is not possible to go into detail here, but those who wish for further information will find it in the Act, or in the detailed summary of the provisions of the Mental Health Act which has been published by the National Association for Mental Health, who also publish a general summary of the Act.

It is obviously necessary that the liberty of the subject should always be safeguarded and in order to ensure this the Act provides for the setting up of mental health review tribunals. This is a complete innovation. The tribunals will consist of legal, medical and lay members, presided over by a legal member. Any patient who feels that he is being detained wrongfully, or any relative who wishes to do so, can appeal to the tribunal for a review of the case. The tribunal will see the patient, his relative and the doctors, and

also take any evidence that they feel to be necessary. It will be their duty to decide whether the patient should be retained in hospital for a further period of treatment or be discharged. It is hoped that this will give patients, their relatives and the community assurance that no patient will be wrongfully detained.

A court can, on conviction, require an offender to go to a suitable hospital for treatment instead of sending him to prison, if he is convicted of a criminal offence and a medical report, obtained by the court, states that he is suffering from some form of mental disorder, whether illness or subnormal development. This should prove of great benefit to many people whose criminal behaviour is due rather to mental disorder than to criminal intent and offer some prospect, in a number of cases, of their rehabilitation in the community.

The new Act provides for the compulsory treatment in hospital of a class of patients described as psychopaths. This represents another innovation. Hitherto it has usually been impossible to treat people who come into this category because they are practically never willing to have treatment or go into hospital and under the old law they could not be sent to hospital compulsorily. It is difficult to give a definition of psychopathy, but speaking very generally, it may be described as a deviation in the constitutional makeup of an individual which results in failure to make a satisfactory adaptation to life in the community.

In many cases these people are a danger to themselves or to others and are anti-social. They are often extremely aggressive and may be violent if opposed or even without apparent cause ; some of them are drug addicts or alcoholics, a number live as tramps, others are persistent criminals. They often neglect or are cruel to their wives and children and may live with women whom they do not marry. A proportion are of subnormal mentality, but some are of average or even superior intelligence.

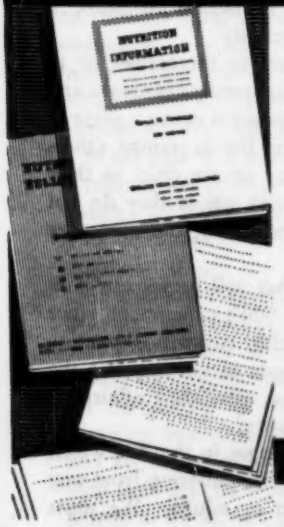
It remains to be seen how far the new Act will be successful in dealing with them but at least it is a worth while experiment, since they are a grave menace to all with whom they come in contact.

Among other provisions are better methods of safeguarding the property of patients who are unable to look after their affairs on account of their mental illness or subnormality.

There are also many other important changes in the Act which should greatly help to improve the lot of those suffering from any form of mental disorder, whether children or adults. We must realise, however, that it depends upon the enthusiasm and co-

operation of the Ministry of Health, the Local Health and Education Authorities, the medical and nursing professions, social workers of all kinds and, above all, the general public to make it a success. Otherwise it will inevitably fail, and if it does the guilt will be upon all our heads, for mental health is everybody's business.

THE NUTRITION INFORMATION CENTRE



. . . supplies BULLETINS & ABSTRACTS on recent scientific findings

Abstracts from recent scientific literature and regular bulletins on subjects of nutritional interest are two of the many services provided to subscribers to the Nutrition Information Centre. WALL CHARTS showing the vitamin and mineral content of foods are available at a very small charge, likewise FOLDER CHARTS containing similar information but in a form convenient for desk use. VISUAL AIDS — films, film strips and wall posters for display or educational purposes are also available to subscribers. Publications include a special diet booklet and diet sheets.

Order forms and particulars regarding subscriptions will be sent on request to the Nutrition Information Centre —

VITAMINS LIMITED

UPPER MALL, LONDON, W.6 *Riverside 5001*

PRESCRIBING FOR HEALTH

DR. R. W. LUXTON
interviewed by

MR. J. C. BURRAS — Nurse Tutor, St. Richard's Hospital, Chichester.

MRS. B. M. GILBERT — "Anne Cuthbert" of the magazine *Housewife*.

DR. S. HEWITT — Medical Officer of Health, Havant and Waterloo U.D.C.

MISS PHYLLIS ROOME — Lecturer in Health Education, Avery Hill College, London.

In the Chair : DR. A. J. DALZELL-WARD, Medical Director, C.C.H.E.

DURING the Annual Meeting of the British Medical Association in 1957, Dr. R. W. Luxton, Consultant Physician to the Christie Hospital and Holt Radium Institute, and Crumpsall Hospital, Manchester, read a paper entitled "A Prescription for Health" (published in *British Medical Journal*, 7th September, 1957, page 544) in which he suggested as six main ingredients : wholesome food, sound habits, right environment, creative work, the promotion of active resistances, and daily meditation.

Dr. Luxton agreed to be questioned on various aspects of his paper by four participants of the C.C.H.E. Summer School in August, 1959, and we reproduce here part of the discussion that took place.

MR. BURRAS :

Dr. Luxton, in your prescription for health, one of your ingredients is, of course, sound habits. Your choice was adequate sleep, regular exercise and self-discipline. Now I think we all know that habits, sound or otherwise, are acquired, but on repetition they do become innate, that is as a reflex. What I would like to know is, how can we stabilise these sound habits and

how can we eradicate the unsound ones? And another point: is there not a danger of being a slave to self-discipline?

DR. LUXTON:

A very good question. I can't answer the first half of it very fully except to say this: I think our habits depend on the primary purpose that we have in life; if we get one thing that really matters to us, then we trim the rest of our way of living to achieve that purpose. And I think one reason why people can't give up smoking is because they haven't a big enough incentive to do so. If you really want to do something, you really do the things necessary to achieve it. If a man wants to win a hundred yard race, for instance, he gives up smoking, he takes the right kind of diet, he goes out at all sorts of ungodly hours to run, and he gets himself really fit. Well, there are lots of other kinds of races that we ought to be running which will enable us to adopt the kind of habits that make it possible.

DR. HEWITT:

But, look at people with very strong views about their duty—they can be a menace to themselves and everybody else, surely.

DR. LUXTON:

You mean they are obsessive, really?

DR. HEWITT:

Yes, they can in fact become a slave to their good habits. As children they didn't wish to go to church, they didn't wish to do this, that and the other. It has since become their duty, and now they are a darned nuisance because they will ride rough-shod over everybody in pursuit of doing what they believe to be their duty. Surely that is a danger?

DR. LUXTON:

That's not a sound habit, surely. I mean it's misusing the word "sound".

MRS. GILBERT:

If I may say so without being at all impolite, you were a bit dictatorial about this question of sleep. Amongst their sound habits, you say, people must have enough sleep. Would you not agree that everybody requires a different amount? Some take more, some less, and that is very important when dealing with children. A mother may say: "Well I get him into bed at six and he won't go to sleep". The answer to that is: "Then don't

put him to bed at six". But you would agree, would you not, that the right amount of sleep is the sleep which enables you to wake feeling fresh and fit and ready for your job, whether it be four hours or fourteen?

DR. LUXTON:

I wish you'd written the paper! Yes, I think you are absolutely right, that people do differ in the amount of sleep they need.

MRS. GILBERT:

The other point on habits was about food. If I may say so, you were obsessed with the thought that so many men, particularly, do become fat and eat too much—City lunches, I think you mention, and other things—and they have no control over their appetite. I on my part find far too many young girls yearning for a slim figure, and because the fattening foods are so much cheaper than the thinning foods they go without altogether, and become anaemic and ill and irritable. Now would you be kind enough to say that you were perhaps a little wrong in putting so much emphasis on the fat people and less on the thin?

DR. LUXTON:

Well, we run in different circles, you and I. Personally I very rarely meet people who are unhealthily thin. What I mean by that is that certain diseases do cause people to be thin, to lose weight—cancer, diabetes and so on. That's pretty obvious. But sometimes people come along and say "I'm all right, but I'm as thin as a lath. What can I do about it?" Now generally speaking, with people who otherwise are well, active, energetic, and so on, being thin is not an abnormality. It's a good sign, actually, and you find that the insurance companies, who are pretty shrewd about this, don't take any reckoning, as far as I know, of underweight, but they take a great deal of reckoning of overweight.

MRS. GILBERT:

I'm so glad to hear your opinion. I don't agree with it, but I like to hear it. If you want to see girls who are underweight and in my opinion are not as fit as they should be, I urge you to attend the next fashion display, where you can look at the models.

MISS ROOME:

Could we return to another ingredient? Before we work up to sound habits there are various ingredients, one of which is wholesome food. But there's mental food as well. The exact sentence

I am picking up is : " Some of the ideas are wholesome, many are fatuous and futile, but some are rank poison, which demand immediate diagnosis and outright rejection." Ordinary people go out into the country near deadly nightshade bushes, yet few children, and I think no adults, get poisoned. Should we not, in the same way, educate people in the true sense, to be able to sift for themselves the poison from the non-poison in books, radio, television, etc. ? I disagree with the statement that ideas are forced into one's mind willy nilly.

DR. LUXTON :

Yes, well, mine was a bold statement, I agree. But I think most of you realise what I meant. Last week I saw a piece in a newspaper which I think was advocating TV and the value of advertisements on TV. It pointed out how Mrs. Jones relaxes before the TV in the evening and how then her mind is open to receive impressions of particular advertisements. I think that when you sit in front of a TV screen, the televisors know that they can get ideas into your mind which otherwise you might be resistant to.

MRS. GILBERT :

I hate to tell you, but I felt for a moment to be on your side. I think that surveys show quite clearly that when something is put on the TV it sells in very large quantities. But after all, there's no harm in these advertisements.

DR. LUXTON :

Do you think there's no harm in the cinema screen ? I mean the bedroom scenes and all that sort of thing, that are depicted so freely there ?

MRS. GILBERT :

I may be wrong, but I should doubt whether in a cinema anything very wrong ever passes the censor, does it ? I think it is just as well that girls who are about to be married should know that there are other things than just sitting down to breakfast with your husband. You cannot keep all ideas, adult ideas, from children. You are just as bad as the famous Mr. Podsnap who always judged everything by whether it would or would not bring a blush to the cheek of the young person.

DR. HEWITT :

Would you not say that in your paper you have made an omission in not dealing with the question of leisure time and how it should

be occupied ? The working week is getting shorter and shorter. Would you like to comment on the suggestion that since many people rush to TV and very little else, there should be something in your prescription to—what should I say ?—educate these people to do something better with their leisure time ?

DR. LUXTON :

I don't find that easy to answer, because I think that the use of one's leisure comes back to the old question of what is your purpose in being alive. I think that people have a basic creativity about them, and that if it's used, they are fulfilled ; and if it's not used, they are frustrated. Now you can use that creativity either in your job, or in your leisure, or both.

DR. HEWITT :

People are getting shorter and shorter hours in their jobs. Some have gone down as far as 35. Don't you think that people are not, therefore, enjoying their work as much as they should ? Don't you feel you might have commented that people should enjoy their work more and not want this tremendous reduction in hours ? Where we are getting automation and things like that, we are going to get mental stress and strain, because (although I know some people don't agree) a man can be in the bosom of his family much too much.

DR. LUXTON :

I think education for leisure would be useful, providing it wasn't done too extensively. Otherwise you would be more or less ruling a person's life for him—organising his work and organising his leisure. He's got to do something for himself, or he will create nothing.

DR. HEWITT :

Surely you would think that, apart from helping people to use their leisure properly, they should be helped to enjoy their work. I think one of the great troubles with the young to-day, is that they are constantly hearing their fathers and their mothers complaining about their work : the mother complaining about the housework and the father about the office. Instead of rising in the morning saying " Well, children, here's another lovely day. Jolly old housework." and " Oh, I shall enjoy going to the office. Such fun. I'm going to tell so-and-so exactly what I think of him ". They don't enjoy their work. I'm sure it's necessary, whatever you do, to enjoy your work. It doesn't matter whether you are

playing or working. Although you get money for your work and you don't for your play, you must enjoy your work.

DR. LUXTON :

Well, I heard a very interesting story illustrating the point that a person finds satisfaction and enjoyment in his work, although it might appear on the surface that it would be the last thing he'd find there. And it's because of other situations from which he escapes. The story was told by Professor Lane, the professor of industrial health at Manchester. He went to a building site in Salford on a terrible day with low clouds and fog and mist, and he found an enormous crane digging holes, taking great masses of earth and putting them down somewhere else. This crane was run by a tiny little fellow, 5 ft. 2 in., a wispy little chap, with a bedraggled moustache. Professor Lane said to him " I don't know how you can stick these conditions, doing this sort of job." And the man replied, " It's fine. When I go home I've got a nagging wife, I've got six children who take no notice of me whatever. And when I get on my little seat and pull these levers I feel like a bloody giant."

MISS ROOME :

Can we just continue this on the other side, though ? A great many people's jobs are never going to be creative at all, and I disagree with Dr. Hewitt that they should enjoy their work more. There are some who are not going to enjoy their work as work. Would you not say that girls working on factory belts, with a good forewoman, under very bad conditions are perfectly happy and, I would think, creative up to a point, when they are chattering and thinking what they are going to do in the evening, and being perfectly co-ordinated as a group in their personal relationships ? Then they go out, perhaps, and only dance for the rest of the evening. They have worked hard, which is one thing ; they've built up happy attitudes during the work, which is semi-creative ; and then they have their fun in the evening, or later perhaps, if they get married, have a happy relaxed evening. Without having a creative piece of work they are creative in their relationships.

DR. LUXTON :

Well, I quite agree that relationships are just as creative as anything else.

MISS ROOME :

But it doesn't sound like it here, really, it sounds like the job to me.

DR. LUXTON :

Yes, I apologise. In relation to jobs, you know, I think that a job which otherwise would be uncreative *could* be creative if the person had as a motto doing that job really well, really perfectly. Now I suffer from time to time from various kinds of secretary. And some of them are a pain in the neck. They can't spell, they can't space out, and they don't use their imagination. Others are perfectly wonderful. If you have a good one she's a happy one ? Not always. Sometimes their work is a compensation for being a little bit miserable in other respects, perhaps. I don't think we ought to pursue this too far, but I do believe in people having an idea of doing a job really perfectly, making a really good thing of it.

MRS. GILBERT :

I think Miss Roome was quite right when she suggested that if your work was not creative (and heaven knows there is more and more uncreative work to do) you can get a tremendous amount of satisfaction about what is also as fundamentally necessary to human beings as creativeness. And that is gregariousness, the desire for companionship. I find that so many mothers who want to go back to work, for instance, go back not for the money, but for the companionship. Although you lay great stress (and probably rightly so) on the need to create, you have not laid sufficient stress, if I may say so with all humility, on the urgent human need for companionship. We are a gregarious species.

DR. LUXTON :

Well, I think you are quite right. I myself am not as gregarious as I ought to be, quite honestly. And I think it's quite true that relationships between people are as creative as anything else. And they are difficult to create sometimes !

DR. HEWITT :

Can we go on to another point here ? I would like to know why you've included the little bit in your paper about meditation. You refer to a necessity for daily meditation in connection with spiritual disorders such as pride, jealousy, resentment, etc. And at the same time, of course, you refer to the vertical plane of values. Now is all the foregoing, be it religious or any other type of meditation, merely straightforward examination of our own conscience ?

DR. LUXTON :

This opens a really big question. I feel, you see, that every human being has inside themselves the potentiality of a new man, a

new person ; and that unless we can see that, and realise that all the experiences we have in life, whatever they are, can be used and are probably intended to help us discover and become this new person, then we are more or less wasting our time in being alive at all. Now, psychologically speaking, we often think of a person as he is, rather than thinking in terms of the person as he could be. As Maurice Nicoll remarks, " If you consider the psychology of an acorn in terms of an acorn, you altogether lose the possibility of that acorn becoming an oak tree." And I rather feel that applies to us. If we allow this germ of something really new in us to develop we can become entirely different kinds of people, in ways we never dreamed of. And that's why I include meditation in this programme, because I believe it is one means (and a very important means) by which that germ can be brought to fruition.

DR. HEWITT :

You still haven't answered the question, have you ? In your paper you said, if I remember it rightly, that in the morning or evening meditation you made your mind blank and there you sat and, as it were, meditated. I don't quite follow what meditation is. It may be that I am slow, but is it a question of meditation or merely searching your conscience ? All you have said, I am sure, is quite true, but do you consider that it is merely an examination of the conscience, or not ?

DR. LUXTON :

Well, in one aspect, I think it is an examination of the conscience. But there is much more to it than that. Take as a physical example a man who blows a supersonic whistle which he himself can't hear. A dog or a horse a hundred yards away will hear it at once, because it's aware of vibrations to which the man himself is quite deaf. He's not got the sensitivity to detect it, he's not receptive. Now I think that we live in a kind of universe in which exactly that sort of thing is happening on a spiritual plane, and that there are things going on in us which we can develop to a point, if we are receptive of ideas, impulses, some of which perhaps reach us through our conscience. That may be one way, but I think meditation is a very good way in which we can get into a different kind of role and receive these things.

MRS. GILBERT :

You said " morning meditation " because evening meditation would tend to look back on the faults and the triumphs and the

other things of our day, whereas morning meditation would come straight from sleep, straight from we don't know where, because none of us know where we are when we are asleep. But coming straight into the world again, from having been outside the world, we are then readier to receive these ideas that might come to us. I must admit that I thought it was a very interesting idea for us to follow.

MISS ROOME :

Could I just take this back again ? I agree in a broad way, but I am thinking now of what students would say to me if they read this. My own feeling is that it's an older person talking, and that people of student age would not be satisfied with this as an ingredient. I think that many young adults will not be able to sit and meditate for any length of time, though in actual fact they may be very reflective people. I would suggest that some people can reflect or think in a reflective way all through the day, on and off, which will do that type of person more good than meditating at a given time. Thinking of these sort of people, I would quote a piece of Goethe, who said : How can you come to know yourself ? Never by thinking, always by doing. Try to do your duty and you'll know right away what you amount to, and what is your duty—whatever the day calls for. With this thought in mind, is not such meditation better at night ? If you wake up thinking you are going to do what the day calls for, how can you think about it till you get up and do it ? That's one side. And then from my own experience in life, and from discussing with young people, 20 or more years younger, I think that many people spend their whole lives in search of God, and some people never find Him. And many people are never in this settled knowledge of God or spiritual understanding, such as you suggest by your writing that you are. But in such searching these people are happy, and healthy. And these kind of people find God much more in the world than alone, and therefore they meditate through the day, at odd times, and some of these odd times become long. Just as long as perhaps you would spend early in the morning.

DR. HEWITT :

Can you tell me if there is any difference in what the last speaker said, between reflection and meditation ? You seem to lay down that reflection can be done at odd times, but for meditation you must obviously go into a state of sort of being like a Yogi, and just let your eyes go out of focus. Is there a difference ? Because if

there isn't, then of course I still take it that it's merely an examination of your conscience, nothing more or less.

DR. LUXTON :

Well, I feel as if I've been shot by a blunderbuss at the moment. First of all, if you think I'm in a settled spiritual state you've got another thought coming. And secondly, Goethe—am I right in assuming he said : Let's have a bit of activism and less quietism, that you learn by what you do rather than by what you think ? Well, of course there's great deal in that. I am quite sure it's true. If you really want to know anything about anything, usually, you have got to go and have a go at it. And what concerns me a bit is the way you do something. For instance, if I may be allowed just to quote some of my own feelings and experience about this, I find that when I know I've got certain people to interview, or I've got certain difficult situations to face, if before breakfast, in a very relaxed and receptive sort of way, I can sit down and just think about that possible interview, I often get ideas come into my head, which in practice are a real help in doing the thing. I believe that this universe is a spiritual universe basically. I believe that God Is, and that one of His simplest ways of communicating with a man is to put an idea into his mind. But I think so often we rush along and we don't give Him a chance to do that. We just carry on with our routine obligations and we live on the surface most of the time.

DR. HEWITT :

So, in fact, you are saying that meditation is merely a slowing down, and receiving the omnipotent word ?

DR. LUXTON :

Well, a slowing down physically to make the reception of your mind greater, more acute. I would say it's becoming deliberately detached, self-detachment from routine, in order to allow other things to come into one's mind.

MRS. GILBERT :

May I ask, Dr. Luxton, do you ever look at your own conscience ?

DR. LUXTON :

Oh yes, I hope so.

DR. HEWITT :

But when ? When you are meditating, or some other time ?

DR. LUXTON :

Oh yes, during the day as well.

MRS. GILBERT :

So I think Dr. Luxton is quite right. It may be a terribly difficult thing to do, but I must just remind him that St. James said, " show me your faith without your works and I will show you my faith by my works ".

MISS ROOME :

I half agree with Dr. Luxton. I hoped this would be very much discussed. But can you remember thinking like this when you were, say 18 to 20 ?

DR. LUXTON :

No, I can't.

MISS ROOME :

Therefore this section of the prescription for health is more suitable for older people.

MR. BURRAS :

As a person over 20, might I come back to Goethe and take up the first part of the quotation : How can you come to know yourself ? Myself, I find it very difficult during my meditation to make it completely objective. I often find that it's quietly coming back to me and that it's more or less subjective. The point is, how can I know that I have come to the right conclusion after I have finished my meditation ?

DR. LUXTON :

Well, I think this is a colossal question. The only way you can know whether a thing is right or not is to try it, isn't it ? If you get an idea that your approach to a certain problem has been wrong, and you get some idea in meditation that such and such is the right approach, then put it into effect.

MRS. GILBERT :

Dr. Luxton, having read your paper I came to the conclusion that you felt, as indeed I feel, that it is essential that people should have some form of religion. And I am very worried about the teaching of religion to children. When I get parents saying to me : " I am not teaching my child any religion, because I would prefer him to make his own choice later on ", I say, " Oh yes, my husband and I felt that about food. We didn't know whether our children

were going to be vegetarians or meat eaters so we decided to give them no food at all until they were old enough to choose "—which usually rather disconcerts them. My view is that children must have some form of religion on which to hang their own ethics. But I am always being faced by this trouble, that parents will teach their children certain accepted dogmas which they seem to have no intention of following themselves. They say "You must go to Sunday School and to church." They say it because they wish to get rid of the children. They have no intention of going to church themselves. Is it not better to teach nothing than to teach something and say: You go that way and I'll go this? What do you think?

DR. LUXTON:

Well, I think if the children are sent to church, it's the church that is teaching them certain things, it isn't the parents. What the parents teach the children is what the parents *are* and what they *do*. It doesn't matter much what they say, So the children will pick up from the parents just what their parents are with regard to religious matters. But I think it very unfortunate that many children to-day are not brought up against a background on which they can subsequently build up a basic ethical code.

MRS. GILBERT:

And there I agree with you. But you have no thought, as I have, that it will do harm to insist upon children going to church if parents themselves don't go. You don't think it'll do any harm?

DR. LUXTON:

I think it might, yes, if the children find that their parents are just not living it.

DR. HEWITT:

Could we leave that and, as we are coming to the end, consider two short questions? You haven't in your panacea for health mentioned anything about the modern problem of excess noise. Now most countries have laws against excess noise. We have certain small ones here, but on the whole we haven't much legislation about it. Do you think that noise itself causes stress, or not?

DR. LUXTON:

Most emphatically I think it does. It's a cause of unrest in the mind that we've completely underestimated. Now what concerns

me as much as anything is noise in hospitals, which I hear a great deal of. And most of it is human noise, preventable noise on a human basis. And the other part of it occurs sheerly from lack of imagination, often on the part of the hospital administrators. For instance, in one big hospital I work in, they've got some laundry trucks which go chugging all round the grounds, carrying laundry from the different wards. Well, these vans were powered by petrol engines, which went around like motor bikes. And it took a number of us years to get these changed to electric motors.

DR. HEWITT :

There's just one other question. Would you like to make a comment about the raising of the age when people should retire ? People retire at 65 or even 60, and yet they are living longer. I don't wish you to comment on the economic problem, but from the mental and physical point of view.

DR. LUXTON :

Well, I think some people should retire at 50, and some people should never retire at all. Some people at 75 are really remarkably efficient in their thinking and their ideas, and even their activity, so I think it's not a sound thing to lay down a basic age at which people should retire.

DR. HEWITT :

In my job I examine people who have got to go at 65 and it's a tragedy to them. They are perfectly well, and then they immediately go downhill. You would agree with me, would you not, as a consultant physician, that it is the wrong thing to make a man retire who is physically fit ?

DR. LUXTON :

Yes, it is. I think it's a serious misfortune. I suppose in a way it has to be, to clear the deck for other people coming up. But I think time will bring a change there, in that people will be encouraged to take less responsible and less active positions, though continuing.

MRS. GILBERT :

I am sure you've got to do something, or otherwise you illustrate the statement that whenever you do good you are very likely to do bad at the same time. And if you say anybody who is fit should be left in their jobs, you are going to have to deal with all the frustrations of the men who are pining for their jobs and can't get

them. So obviously something has got to be done. You can't go all out and say these fine folk should be left in their jobs, because you are creating trouble the other side.

MISS ROOME :

There is another question which I hoped would get answered as you went along, but it hasn't. It sounds rather short but there's rather a lot to it. You use the expression " absolute moral values " in one place, if not two. Would you define what you mean by " absolute moral values " ? The other question was to ask for a short explanation of why the word " forgiveness " doesn't come into the section called " Charter for Freedom ".

DR. LUXTON :

Well, answering the latter question first : I don't know why it doesn't come in. It's a useful ingredient that could well be added. In fact, I don't reckon for a moment that the prescription is a final prescription. It was just a few ideas thrown into a bottle.

MISS ROOME :

Do you think that the word " Freedom " here takes in the great importance of forgiveness, whatever kind of religious beliefs people have, or that it is not very important and it wasn't meant to come in ?

DR. LUXTON :

Well, I think unless people have a sense of forgiveness in themselves they are not free. It's obviously part of it. I think there are two sides to it. One is having the thing in oneself that forgives other people and the other is having a sense of personal forgiveness for things we know we have been wrong in.

MISS ROOME :

Now about the absolute moral values ?

DR. LUXTON :

Of course, there are a lot of values one could consider as absolute values, and I got the actual idea from the old Oxford Group standards of absolute honesty, absolute purity, absolute unselfishness, absolute love. I think they summarise remarkably well the kind of things that are basically useful to check oneself up against. Now the idea of " absolute "—take honesty, for example. Well, we've got a conventional honesty, but when I think of my income tax return, for instance, in relation to absolute honesty, it makes a difference on the figures. And we always make allowances for ourselves don't we ? If there is such a thing as objective honesty,

that's the sort of thing, it's the only thing, that's any good. I find personally that I've got a weakness for myself, and therefore an absolute standard is really something worth-while considering.

DR. DALZELL-WARD :

Thank you very much. Ever since the time of the regimens of the schoolmen and probably before that, there have been attempts to codify some personal practice of health. These codes have usually been completely impracticable, and very often their implication was far more fearsome and far more disagreeable than falling prey to the various diseases that one could prevent by them. I myself have never been very fond of anything that smacked of regimen, because human physiology is far too flexible. It has a tremendous resilience and cannot be controlled by such rigid rules. So it seemed to me that Dr. Luxton had produced something which is a substitute for a regimen. It is a general philosophical framework and has, as he says, just a few ingredients which, of course, can be added to by most people.

I think perhaps the most impressive thing about this discussion is this : if one compares the kind of things that would have been discussed in a similar panel, say only 20 years ago, they would have been concerned almost entirely with the prevention of infection, with the taking of the right diet, the wearing of sensible clothing (whatever that may be) and in general with the rather mundane, cautious and safe sort of things that one could talk about as medical and nursing people. But to-day, you see, in this discussion the emphasis has been rather upon things of a philosophical nature and on values generally, personal, social and community. We have perhaps gone to-day beyond the purely psychosomatic concept, where disease might be said to arise purely from within people themselves, and looked at an environment which, even though many of us may find it difficult to accept, at least is something which has given rise to speculation. To me, the most appealing phrase in Dr. Luxton's paper was that the doctor should set the people free.

SURVEYS OF KNOWLEDGE, HABITS AND ATTITUDES:

Their Role in Planning Health Education

By DR. ČENĚK ADAMEC,
Central Institute of Health Education, Prague.

In Czechoslovakia health education is carried out in small homogeneous groups by lectures, discussions and in similar ways, but also by the press, over the radio and television. The Institutes for Health Education (Prague and Bratislava) influence in various ways the content and methods of health education on a national scale. Among other things they publish model lectures which are used by lecturers as a basis for preparing their papers. Similarly the Institute exerts in other ways a central influence on the content of health education, e.g. by making available instructive films, diafilms, posters, as well as methodological publications, etc.

When considering the health education content of a given subject, the problem arises which particular facts should be selected from the great amount of scientific results, which information should be emphasised, and how much space should be devoted to it. Every health education medium can contain only a small proportion of the immense reservoir of facts revealed by scientific research. The selection of suitable facts is considered a very important decision. Equally important is the manner in which certain scientific facts are presented : as information, as a recommendation, as an urgent appeal ; whether they should be supplemented by examples, instructional media, etc.

In deciding on the content of health education on a particular subject we are, of course, guided by a statistical analysis of the morbidity and injury rate, trends of food consumption and other official data. Various surveys conducted by the sanitary authorities also prove a valuable basis. According to our experience these basic data can be supported with advantage by the results of surveys of the health consciousness of the population, i.e. by investigations of knowledge, habits and attitudes to actual

problems of health care[1]. When we reveal in which spheres of knowledge and behaviour there are gaps and shortcomings, we obtain a useful guide to selection of the content of health education materials and the manner in which the selected facts should be presented to the public.

Let us assume, then, that the state of knowledge of the population, as far as different elements in health care are concerned, is important for the worker who influences the content of health education. Is it, however, possible for the worker taking decisions on centrally prepared health education media to draw any conclusion on the knowledge, habits and attitudes of the population from experience gained in his own health education activities or in the course of his medical practice? Experience has taught us that the personal experience of an individual is influenced by subjective factors to such an extent that his idea of the health consciousness of a large mass of population can be very distorted. If we compare the estimates of specialists on the state of the health consciousness on certain actual problems, we usually find that individual estimates differ considerably. We also find discrepancies between individual estimates of the state of health consciousness and the results of surveys.

In the Central Institute for Health Education the problem of investigation of the health consciousness of the population is tackled by several methodological and technical procedures. Sometimes we conduct surveys in relatively small groups, e.g. in schools, factories, etc. When we have to use such results as a basis for health education work focussed on large population groups, the danger arises that we shall generalise too hastily.

We assume that, under conditions outlined in the introduction, it is of advantage to investigate the health consciousness of samples of the population. We should like to deal with this procedure in greater detail. Because we have used it in investigating nutritional knowledge, we shall illustrate the method using this example.

In this investigation we used a sample of 2,000 adults representative of the entire Czechoslovak population[2]. We took care to select, as far as possible, an appropriate number of

[1]In the field of health consciousness surveys we start from the basic conceptions formulated by L. S. Bogolepova (*Health Education*, Chapter 1. Prague, 1957. Czech translation).

[2]We used a method sometimes described as quota sampling. Our method resembled, for instance, that described in the publication *Interviewing for NORC*, University of Denver, Colorado, U.S.A. We consider this method adequate for obtaining basic information on health consciousness. There is an extensive literature on sampling methods, and we admit that for investigation of health consciousness other methods are also suitable.

individuals from each region, and also checked the composition of the sample as regards sex, age, social group, and size of locality. Two hundred and thirty instructors of health education were carefully trained for the personal interviews by written instructions and in some regions also by oral instruction. We took special measures for checking their work[1].

These field workers conducted personal interviews according to a previously prepared questionnaire. Questions were selected on those subjects of health consciousness which were of greatest interest to us, because we had no clear idea to what extent the public is familiar with various nutritional problems. I shall quote a few examples :

In recent years we had tried to influence the population by health education in gaining a correct idea of the relationship between nutrition and health. We also tried to influence food consumption in an appropriate manner. We prepared various texts, slogans and other media which bore the slogan " Varied food—the basis of health ". We recommended also, the so-called " Rule of Five "[2]. In the course of the above investigation we wanted to find out more about prevailing ideas on " sound nutrition ".

In the past we had made various recommendations regarding

[1]In addition to common methods used to check the collected data, described in textbooks of statistics and of field surveys, we used the following : After each interview our field worker offered to send by post to the person interviewed, some printed material on nutrition—either recipes for dishes with cream cheese or a booklet—if desired. Practically all interviewed persons accepted this offer and gave their name and address. The requested material was forwarded to them. If the material was sent back because the addressee was unknown—which happened in a small number of cases—we considered the questionnaires as less reliable and did not compute them. If from the number of interviewed persons questioned by one interviewer two lots of material were returned by post, we excluded all questionnaires sent by this particular interviewer. This situation was foreseen, and from the very beginning we included in different regions and communities a " reserve " of interviewers. Material supplied by these was used to make up for that which was discarded. After some of the addressees received our publications on nutrition and food, a correspondence developed between them and ourselves. This also enabled us to evaluate the field work of some interviewers.

[2]" The Rule of Five—the Rule of Good Nutrition " :

Mind your daily menu includes
something from each group of foods
There are five groups :
VEG., MILK, BREAD,
MEAT AND FAT.

Now, after the survey, we formulate " the rule " in rhymes. We hope that this will help people to memorise the rule.
Further explanation given : The first group (vegetables) includes also fruit and potatoes. The second group (milk) includes also cream cheese, cheese, yoghurt, etc. The third group (bread) includes all cereal products and rice. The fourth group (meat) includes also fish, offals, eggs, and pulses. The fifth group (fats) includes in particular butter and edible oils.

sound nutrition in the form of preferences : for instance, " prefer potatoes to dumplings "[1] ; " prefer cheese to smoked meat products "[2]. It was of practical importance for us to know to what extent these recommendations were fixed in the minds of people and to what extent they influenced their behaviour.

Czechoslovakia is a country with a high sugar consumption per head. Many doctors agree that this consumption is excessive and that it has an adverse effect on national health. (Sugar and sweets, owing to their taste, suppress nutritionally more valuable foods in the diet.) We were interested to know whether people are aware of the fact that sugar is an unbalanced food which does not contain any protective nutrients. We therefore put some questions regarding popular views on sugar.

The concept of " nutrition " and " health " are often correlated, also, in the national health education campaign which is repeated every year. We were therefore interested to know the views of people regarding the results of failure to adhere to the principles of sound nutrition. Therefore we included a question on this point.

In our interviews we used closed as well as open-end questions, questions revealing knowledge, attitude and habits, questions revealing interest in health education, questions on the experience gained by people as a result of health education. When evaluating the material obtained by personal interviews we were interested to know what proportion of answers were in line with health education on sound nutrition, how many differed in some degree from scientific views, and how many were quite incorrect. We also paid special attention to answers such as " I do not know " or " no answer ". We subsequently compared different answers (correct and incorrect) and the results obtained by different questions (knowledge and habits) and compared the standard of the answers from different strata of our sample.

We obtained the following data : Women were usually more familiar with the principles of sound nutrition. But in most questions the differences between the group of men and women were not profound. Among people aged over 50 years knowledge of nutrition was definitely more limited than in younger individuals. Farmers were in most instances less familiar with these problems than the other social groups.

[1]Dumplings are a " national " dish in Czechoslovakia. Their main ingredient is white flour with a low nutritive value.
[2]The consumption of smoked meat products is considered excessive, the consumption of milk products low.

In the Slovak regions the population was less familiar with most problems than the Czech population, but interest in nutrition was equally high in both parts of the country. The higher the education, the more answers corresponded to the principles of sound nutrition. The number of incorrect answers from people with higher school education gave an idea to what extent schools fulfil their responsibility in nutrition education.

As far as the nutritive value of foods is concerned, and as to different preferences between more and less nutritive foods, we obtained some very interesting information. We found, for instance, that many people were familiar with the nutritive value of cheese, while they had only very limited knowledge on the value of sugar. Many people still believe in the old superstition that sugar exerts a beneficial effect on the development of bones[1].

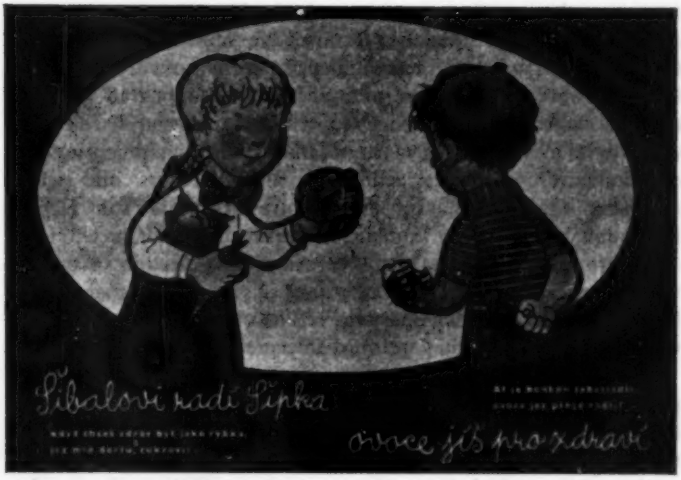
In connection with ideas of sound nutrition it was revealed that some information given in mass campaigns in health education during past years was remembered by many people, e.g. the principle of a varied diet. " The Rule of Five ", however, was not mentioned spontaneously by anybody in connection with sound nutrition. We thus obtained a valuable general idea of the cumulative effect of different health educational appeals and recommendations applied in the past.

As far as the idea of the consequences of unsound nutrition is concerned, we found the following : most people assume that failure to respect the principles of sound nutrition leads only to digestive disturbances (diarrhoea, constipation, gastric ulcers). Cardiovascular diseases, dental caries and other conditions were mentioned by a much smaller number of individuals.

From the results which we have described in general and which we have illustrated with some examples, we drew some conclusions for practical health education, using mass methods of conveying knowledge and information to people. Some conclusions are quite concrete, for instance the need to stress the low nutritive value of sugar[1]. Other conclusions had only the character of general methodological guidance. We found that knowledge of the nutritive value of some foods was fairly universal, while the implementation of these principles in practice was more limited.

[1]We have included in a number of publications and other materials a warning against excessive sugar consumption. This is based not only on the views and findings of workers from the Institute for Human Nutrition and the Society for Rational Nutrition on the actual consumption of sugar, but also on the results of our investigations of health consciousness, which suggest that the knowledge of our population as regards the nutritional value of sugar is inadequate.

Many people, for instance, are familiar with certain principles, but knowingly fail to adhere to them. We came to the conclusion that in some instances there is no point in continuing to propagate certain facts, because these facts are universally known, and it is necessary to seek means of influenceing the behaviour of the population. The measures on which we decided were the following : closer collaboration with the authorities concerned with food distribution, and direct influence on these economic authorities as regards sound nutrition. Secondly, to seek types of health education which directly promote action or give guidance for action.



A poster for children (indirectly for adults also).
Šipka explains to Šibal that fruit and vegetables are
better for health than sweets.

The results of the investigation described are used, in conjunction with other data, in various ways. We take them into account when preparing the plan of publications of our Institute, when discussing problems with authors of publications on nutrition education, when preparing methodological directions for the annual national campaign " Nutrition and Health ". (This campaign is focussed, among other population groups, particularly on rural districts.) We use these data also when discussing with the education

authorities the extension of nutrition problems in school curricula, etc.

We assume that investigations of knowledge, habits and attitudes are of importance for increasing the effectiveness of health education conducted on a mass scale. The results of this research help us to detect the gaps in the health consciousness of the population, their way of thinking and the motivation of their behaviour. Without these results we should be like a speaker addressing his audience with closed eyes, not knowing whom he is addressing, not knowing the response of his audience.

The use of the above method is, however, limited. If during the interview, the questioned person gets the idea that the questions are set to reveal his standard of knowledge on health problems, he can attempt to appear more enlightened than he actually is. Thus, if he is aware of some medically and socially approved rule, yet does not adhere to this rule in practice, he can pretend that he does observe it. We must be aware of this fact when preparing the questionnaire, when instructing the field workers and when analysing the results. In our Central Institute for Health Education we therefore combined investigations conducted in a small group by means of actual observation (selection of dishes) with investigations conducted by means of personal interviews in a large population. When analysing results obtained by interviewing we are always aware that we must interpret them critically.

The use of surveys conducted by interviews on samples of large population groups depends of course on the problem under investigation. By means of the procedure described above, we can, no doubt, tackle *general* problems of health consciousness. If we used questions which have no sense and practical significance for the majority of the people interviewed, if their answers could not be based on their own reflections and experience, the results would have no value. It would be nonsense to ask questions on the principles of a diabetic diet in a sample representing the general public, because we know that only a small portion of the population suffers from diabetes. We do not expect the general public to be familiar with this diet.

Finally, I should like to emphasise that we do not underrate the value of investigation in smaller homogeneous groups, and that we use this method ourselves. It is used particularly when we have to rely on case histories of the individuals, whose health consciousness we are investigating, or if we have to use the method of observation, or when we are concerned with some special

problems of health consciousness. But if we are investigating the knowledge of wide strata of the population on general principles of health, and when the results are to serve as a basis for practical health education using mass means of propaganda, we consider the above described procedure of investigating the health consciousness most valuable. We feel, however, that even for practical health education, performed in small population groups (for instance in a small community), the results of a large scale investigation of health consciousness may provide useful information, where no results of "individually tailored" investigations are available. In such a case the health worker must, of course, be careful, because the picture of health consciousness obtained in a large population group may not reflect accurately the situation in all individual communities. The damage caused by possible errors will not be as great as if we generalised incorrectly from results obtained by surveying a small homogeneous group (in a small community), and applied them hastily in work with a large population.

Appendix—example of tabled results of a survey.

Contact with nutrition education and interest in nutrition information. (A section from a table).

	Percentage of persons who remember reading or hearing about good nutrition	Percentage of persons interested in nutrition information
	%	%
All persons interviewed (2,000)	68	87
Czech regions (1,420)	79	87
Slovak regions (580)	39	87

This is an example of tables which offer conclusions for practical health education. The above figures reveal that interest in nutrition information, especially in Slovakia, is not satisfied, i.e. at the time of the survey.

SMOKING AND LUNG CANCER : The Middlesex Approach*

By A. C. T. PERKINS, M.C., M.D., D.P.H.,
County Medical Officer of Health, Middlesex.

It was in 1953 that the Medical Research Council first published details of an investigation which seemed to point to some connection between the amount of cigarettes smoked and the amount of lung cancer prevalent in males. As the years went by, further evidence confirmed that the Medical Research Council were working along the right lines. So in 1956, a letter was addressed to all the youth leaders in Middlesex, pointing out the facts already known and suggesting that it was a good idea at least to put off smoking until a later stage of life rather than in the school years.

Then, on the 27th June, 1957, the Minister of Health made his Parliamentary statement, saying, " The Government feel that it is right to ensure that this latest authoritative opinion is brought effectively to public notice so that everyone may know the risks involved in smoking. The Government consider that these facts should be made known to all those with responsibility for health education. Local health authorities will be asked to take appropriate steps to inform the general public ".

The Middlesex Project

The statement by the Minister of Health on 27th June, 1957, clearly laid upon county councils the responsibility of informing the general public as best they could on the facts of the matter as known. It was realised that the publishing of certain facts could cause emotion among those people who feared them, and indeed the radio, the press and television had already made much of the

*Reprinted from *County Councils Gazette*, March, 1960.

statement and the evidence so far presented. With past experience also in mind, the conclusion was reached in Middlesex that there would be little use in conducting a large outside publicity campaign in the county, particularly directed to the adult, but that if there were any substance at all in the findings of the Medical Research Council then the answer would only be found in a long-term project directed towards children at school, with the aim and object of getting them to put back the date on which they first start to smoke, and the hope that perhaps eventually they might not start at all.

It was decided that it would be foolish to undertake any project whatsoever unless research was first of all undertaken to ascertain if a certain course of action was likely to be productive. It is easy to be satisfied with the thought that if leaflets costing hundreds of pounds are distributed, one has done the job of health education with which one is entrusted, but who has carried out research to find out whether such distribution would in fact be successful in attaining the object desired? It seemed that the principles of organisation and method were just as important in this work as in any other, and therefore the project undertaken in Middlesex is designed along these lines. First of all to study the problem, secondly to analyse it, and thirdly to put forward useful suggestions for a future campaign based on this evidence.

Set a thief . . .

Thus it was suggested that the County Health Education Officer be allowed to undertake research into this question in schools throughout the county, not merely to find out how many children smoked, but rather to seek their advice in telling him how to present this problem to them in a way which would successfully convince them that smoking was a good thing to leave alone. The general principle of this research enquiry commended itself to the Health and Education Committees. It was apparent that support would have to be forthcoming from the head teachers, particularly in view of the enquiry's long-term effects, so representatives of the two committees, with the County Health Education Officer, met the Joint Consultative Committee for Primary and Secondary Education.

The Joint Consultative Committee gave their blessing to the research scheme which was, in essence, that the County Health Education Officer should visit primary and secondary schools in selected areas of the county and, without any teachers present, should go into the classes with a tape recorder to talk about the

problem and obtain the views of the children themselves. The object of the tape recorder was fully explained, it being emphasised that neither pupils' surnames nor the name of the school would be recorded but that Christian names only would be used. The purpose would be twofold ; first of all to act as verbal notes so that afterwards the County Health Education Officer could analyse what had been said without relying upon memory ; and also that the tape recordings would show to any critic at a later stage that he had not led the children into agreeing with an idea which he himself had put forward ; that indeed his voice and actions were designed to be as detached as possible so that what was said by the children was indeed their own personal contribution. The aim of any research was purely to find the truth, and if this could not be found then research could not be said to have taken place.

This Middlesex project as an adventure in research is now completed, and the final report has been put before its sponsors, the Joint Consultative Committee for Primary and Secondary Education, who endorsed the recommendations it contained and forwarded them for the consideration of the Education Committee.

Research method

It may be of interest to disclose the research method adopted by the County Health Education Officer. It was important in each of the selected areas for him to have access to classes of children from the age of nine to sixth-form grammar school level, and for them to feel perfectly free to express their ideas to him. It was also important that geographical and social class areas should be taken into consideration and further, that the judgment of the head teacher should be sought as to the general ability of the class interviewed, in order that so far as possible the whole range of school ability should be tested. Thus, the bright nine-year-olds and the dull nine-year-olds have been interviewed, as well as, in each age-group, the various forms in both modern and grammar schools. The method of working was as follows :

The Chief Education Officer having consulted the local Education Officers, and suitable schools having been suggested, the head teachers were met by the County Health Education Officer who explained the research project. This was in turn explained by the head teachers to the school children themselves, and later the Health Education Officer was introduced to the appropriate class and then left on his own. The tape recorder was plugged in ; the Health Education Officer gave a preliminary survey of the evidence so far

accumulated to explain the reason for the project ; and then asked specific questions, namely :

How many of the class smoked ?

How many cigarettes did they smoke a week ?

From what source did they obtain their cigarettes ?

From what source was money obtained, for example, pocket money or Saturday work ?

To those who smoked—why did they smoke ? when did they start to smoke ? Did they feel it was a habit ?

To those who had never smoked—why had they never smoked ? Did they intend to smoke ? Had they heard of any connection between smoking and an illness called cancer ? Had they heard anything at all about this type of illness ?

What sort of things, if any, would persuade them to give up smoking if they already smoked ?

What part did example play in smoking ? If their teacher suggested that they should give up smoking while he himself continued would this have any effect ? If their parents continued to smoke but advised them not to smoke, what reaction would this bring ?

What influence did the group exert ? For example, if the youth group to which they belonged smoked or, alternatively, if they were non-smokers, would that exert any influence on behaviour ?

Advertisements on television—did they see them—did that medium exert any influence ?

In what way while at school could information be best put over to them which would have the effect of stopping them smoking or preventing them from starting ; for example, would talks on the subject by school staff or visiting medical staff exert influence ?

Would posters be looked at ? If so, what type of poster ?

At this stage leaflets on smoking and lung cancer were discussed ; they were available from various sources and had previously been distributed to the class.

If posters and leaflets were a useful medium, what sort were required ?

Would a film show at school at intervals be of use in preventing them smoking ? If so, what should be its theme ?

(Here, three suggested scripts and their general film treatment were given to the children and they were asked to vote on the three types suggested).

Finally, were there any means so far not talked about which would stop them smoking or exert any influence at all ?

School research results

No preconceived ideas existed in the mind of the County Health Education Officer before this research was undertaken. Least of all was it expected that a general trend would be found, but this in fact has happened and is, probably, one of the most useful findings of the research project. This is referred to later. The evidence given by the children who smoked confirmed the general findings, and the statement of the tobacco manufacturers themselves, that something like 40 per cent. of the present smoking population started to do so under the age of 16. It was also found that most of the boys started to smoke, if they smoked at all, around the age of nine or ten, while the girls started later, at the age of thirteen or so. It was intriguing to discover that the influence exerted upon a child to smoke in the first place usually came from the associates with whom he played in his own home area and not those at school, and astonishing to find that there are apparently some parents who regularly give their children cigarettes to smoke even at the tender age of nine.

In a long-term project of this kind, it is, of course, essential to have the support of both teachers and parents. Therefore, the question of example is of paramount importance. Research showed that young people to-day can understand fully how quickly new scientific facts become known. Therefore, they have said that if parents and teaching staff were to suggest to them in a reasonable way that although they themselves still smoked it was because the habit had become so strong that it was difficult to break, but that had they been in possession of the present facts when they started they would never have commenced, this explanation would appear reasonable and stand a good chance of being accepted. Inevitably, of course, there was the hard core of young people who said that nothing at all would make them stop smoking and thus it was that the County Health Education Officer at the end of his investigation came to the conclusion that something like 75 per cent. of young people could, if they were in possession of the facts, be persuaded either to stop smoking or not to start and that a hard core of some 25 per cent. of young people of school age would be left, in whom any reasoning would fall on deaf ears.

Only one poster of those available appealed to young people and that was the picture of a single cigarette, the smoke of which spelt out the word 'Cancer'. This, they thought, was good. Of all the leaflets presented to them, few of the children said that they would read them at all, while even those who would read them said

that they were quite sure that the leaflets would exert no influence upon them. It is clear, therefore, that any money spent on the distribution of these leaflets would, at least, in Middlesex, have been money ill-spent. However, children have advised the County Health Education Officer of the type of leaflet which would stand some chance of being read by them and possibly of its advice being accepted. Undoubtedly, therefore, a future project will be the provision of a suitable and agreed leaflet.

Smoking made too easy

Young people found it hard to believe that grown-ups really meant business when they said that smoking was not a good thing for young people, while it was so easy to obtain cigarettes. Almost any shop would sell cigarettes to children of any age without question ; even if it were not so, there were always the cigarette machines from which they could obtain what they required. Furthermore, none of them had ever been stopped by a policeman and asked his or her age ; therefore, they felt that nobody really bothered seriously about their smoking habits save the headmaster at school, and here most of them agreed that if caught they would suffer dire punishment.

Views on the question of visitors and lecturers to schools were also illuminating. Most young people said that they were lectured at all day by their teachers on different subjects and therefore were not too pleased at the thought of somebody going into their school who perhaps could not lecture anyway and who, in a stumbling way, tried to put over facts about smoking and lung cancer, even though that person had the qualifications of a doctor. But they did say that they would welcome the opportunity to discuss the matter, and would like to put their questions and points of view to a visiting person. They liked, particularly, the idea of a tape recorder being used, and, incidentally, while the tape recorder was in use there was never any difficulty at all in getting free discussion by the groups.

A serious approach

It was not surprising that all the children questioned said that they would like to see a film on this subject, but the trend which was referred to previously now became surprisingly apparent. The officer submitted three scripts for the treatment of a film on this subject and without exception the majority in every school voted for one particular treatment. In effect what they said to him was

this : " If you want us to treat a subject seriously, then you must put it over to us in a serious and purposeful way ". It is obvious, therefore, that if a film were made on these lines in the future, it would stand a very good chance of being appreciated and its lessons learnt and taken to heart by the majority of school children.

Very briefly the following were the three film treatments submitted to each school.

A cartoon approach to the subject, not too light hearted, but having a rather jocular commentary, which traced the life of a lad who smoked whilst still at school and who in later life was prevented by the onset of lung cancer from enjoying life to the full. This fairly light-hearted approach, it was suggested, might have a rhyming commentary, e.g. " Horace Coker was a smoker ", etc.

The second treatment suggested was a family approach, with father, mother and two children—a boy of 15 and a girl of 13. The mother is worried by her husband's continual hacking cough, as she has recently read about the connection between smoking and lung cancer. Father is already worried about his inability to conquer his smoking habit and this leads to family disruption, particularly as he is told by his wife that the son, although still at school, is smoking quite considerably. The bullying approach of the father to his son is ineffective, and finally the daughter begins to smoke as she goes to her youth activities after school. The film continues with the diagnosis in the husband of cancer of the lung, the son striving to achieve success in athletics but always just missing because his fitness is impeded by cigarette smoking ; finally, the son's desire to smoke becomes so overwhelming that he is unable to save money to set up his own home.

A popular treatment

The third treatment—one which received the majority vote from all schools—had as its opening feature a hospital scene rather similar to that shown in the I.T.V. programme " Emergency Ward 10 ". As a man is wheeled into the operating theatre, a white-coated figure leaves the operating table, comes forward to a close-up and says " This is the story of Mr. X who is now about to have an operation because he has cancer of the lung ", then a series of flashbacks tells the story of the patient's life—how it was that he started smoking as a youngster for the sake of looking big, continuing this during his youth club days, laughing away the suggestions from time to time put to him that smoking was not a good thing from the point of view of health, saying always that

this was the sort of thing that happened to other people, not to him. The circle of events returns us to the operating theatre, where the surgeon says that although the operation has been successful, the man's life in future, minus one lung, will now be impaired. At this juncture it is perhaps as well to make it clear that no part of the operation itself would be shown, merely the theatre paraphernalia.

It was of course useless to get classes to vote without asking the reason for their particular preference. The majority said, in effect, " what we want are the facts of this matter so that at least we feel that we have had them presented in a way which leaves us free to make up our own mind, and we want to see a serious subject treated seriously. If you say that so many people die from cancer of the lung then it is obvious that there must be many operations of this sort carried out."

A by-product of this investigation was a suggestion of the Finchley Education Committee, in the light of a report from their Joint Consultative Committee, that a leaflet be prepared specifically for the use of teachers and youth leaders which in plain terms would set out the *facts* of the problem as known, with some of the opposition points made by the tobacco manufacturers. This suggestion was adopted, and a leaflet prepared on these lines has had a very good reception throughout the county. So much so, that a reprint is now in preparation for general distribution.

The project so far undertaken in Middlesex seems to show that the reconnaissance which has been undertaken, although time-consuming, has indeed been time well spent and that there are definite methods available which, if properly used, can be expected with confidence to exert influence on young people in the future to stop them smoking whilst still at school. But it must be emphasised that any campaign, to be at all successful, must be continuous in nature. It must have the support of the young people themselves, it must have the support of the teachers in school and it must have the support of the parents at home.

All this adds up to time, liaison, and money to carry out the project, but it is quite clear that if a serious attempt is made, then smoking by schoolchildren in this country can be cut down to a bare minimum, and this must indeed result in a positive improvement in health and attitude to health throughout the country.

ANTHROPOLOGY IN HEALTH EDUCATION

A Review of the Literature

By SALEEM A. FARAG, Ph.D., M.P.H.
School of Tropical and Preventive Medicine,
College of Medical Evangelists,
Loma Linda, California, U.S.A.

Introduction

In 1705 Ramazzini contended that health workers should study man in his social and cultural setting[1]. Since that time significant changes have been made in the approach to health practices. To-day the health field is no longer considered a monopoly of the physician and his technical associates. In 1915 the *Journal of Sociological Medicine* pointed out that all of medicine has its "social aspects"[2]; Roemer and Caldwell suggested in 1948 that sociological training be given to medical students[3]. In 1952 a University of North Carolina Seminar pioneered in a series of socio-medical research to be undertaken by social scientists and physicians[4]. In 1953 Foster asserted that the development of successful public health programmes depends not only on technical excellence of medical knowledge and practices, but also the socio-economic potential of the country and the readiness of its people to accept new ideas and habits. Cultural problems cannot be solved simply by hiring friendly, understanding, well-meaning personnel. The problem must be studied and analysed with appropriate scientific methods in much the same way as we would analyse a difficult biological problem[5]. James Roney, Jr., wrote that many of the difficulties, failures, and wasted effort of the Technical Cooperation Administration could have been avoided if cultural anthropologists were utilised to contribute to the

programme. The burden of his thesis was that although anthropologists who are area specialists are desirable, it is the type of approach rather than the body of ethnographic data which a person may have, that is more important, since this is not a speciality, but rather the application of knowledge of many different branches of anthropology whether cultural, linguistic, or physical. Human behaviour cannot be predicted accurately, but enough is known to draw certain broad principles which can aid[6]. In 1956, Benjamin Paul termed the cultural aspect of medicine "medicine's third dimension". He stated that "medicine now sees the patient in two dimensions, the organic and psychological. This may give the physician a good picture of the patient for it takes but two dimensions to make a pictorial dimension, but if the physician wishes to look beyond the picture and see the patient as he really exists in the round, the physician will have to add another dimension to his medicine, the cultural dimension"[7].

A review of the literature clearly points out that the medical and public health fields have in the last four decades come to recognise the importance of anthropology. There is a fast accumulating body of data of great importance and value in the field of medical sociology; however, "cultural analyses of health are few in number. For some reason, health is a neglected area of research among cultural analysts"[8].

It was Hugh R. Leavell who stated that "it is in the 'public' part of public health that we are weak, the 'health' aspects somehow seem simpler for us." Much has been written in the last decade concerning the importance of projecting foreign public health education programmes after careful consideration of the culture of the people[9]. Dorolle pointed out that "unfortunately much harm has been done by well meaning but mistaken approaches to certain non-mechanised populations and by maladroit philanthropy on the part of persons inspired by the best of intentions[10].

It is generally agreed by those engaged in domestic as well as international health education that socio-cultural factors must be carefully weighed, before introducing changes in the community. Anthropologists were among the first social scientists to formulate the hypothesis that the way of life of a people is an organic, functional, total-complex[5]. The medical leadership has accepted the soundness of this approach[9]. Sufficient examples appear in the literature to prove without a doubt that anthropology can and does play a unique role in the Public Health Education programme[11-18].

No one therefore can, or desires to, contest that anthropology is an integral part in public health and in public health education in particular. But the role that the anthropologist plays is somewhat ambiguous. Perhaps the ambiguity, as some have suggested, is due to the approach that anthropologists have used and are still using : that of confining their studies purely to the analytical and descriptive aspects of primitive cultures.

For the past sixty years anthropologists have been studiously gathering information and publishing data about many countries. Most of this work was done with no thought of the application of the data : for many anthropologists regard applied anthropology with ambivalent feeling. And as in other fields, the big question is basic versus applied research. Anthropologists felt and still feel that their obligation to society is fulfilled by cultural analysis and teaching. " There is evident reluctance " Foster states, " to come to grips with the applied challenge for fear one's scientific integrity will be compromised "[20].

Perhaps such an outlook can be justified in that it coincides with the basic philosophy of anthropology—the optimistic belief that society is steadily improving. " Such an outlook was conducive to a scientific point of view which laid stress on research for its own sake, and which held that any and all new contributions were justifiable, simply as contributions to knowledge, and not because of their practical import. The goal structure and value system of anthropology were formed under these conditions, as it is natural that maximum prestige came to be attached to theoretically based research "[20].

The twentieth century has brought about a definite change in such an outlook. The world has advanced technologically. The most underdeveloped countries are demanding a place among the nations of the world. The scourges of the two world wars have helped to convince that the achievement of social progress and economic development is not gradual and automatic. And for the first time in the history of mankind, man came to realise that he can no longer remain so naive as to believe or assume that conditions will automatically improve. " Rather, it is generally realised that the achievements of progress will require the full utilisation of all human knowledge, and that broadscale social and economic planning are essential on both national and international basis. The size and scope of American technical aid programmes, popularly known as Point Four, testify to the extent to which we as a nation accept the changed point of view. Cultural concepts will

play an increasingly important role in such programmes "[10].

Assuming now that this premise is sound, the next question that faces us is who are the people most qualified to contribute to the solutions of such problems ? The answer is obviously those who are scientifically trained and qualified—namely the anthropologists. They are the ones who possess the techniques of analysing the culture and interpreting them. Admittedly the anthropologist's value system must be modified to include a willingness to participate in action programmes. This does not mean a complete rejection of the purely scientific approach. He must bring his knowledge, ethnological technique and special view points to bear on practical activity. " This will invoke criticism from the old school of anthropologists who have remained faithful to the purely scientific conception of their role "[10] ; but it is essential if anthropologists are to fulfil their obligation to contemporary society.

The anthropologist's place on the health team

Liaison between fields is always desirable. In recent times the growing partnership between the fields of medicine and anthropology is most promising. Simmons and Wolff state : " The social scientists are responding to the best of their ability, but their training has been so different from the medical specialists that comprehension of the issues under investigation has been impeded by lack of communication between the two groups "[9].

In spite of this lack, we find that to-day anthropologists and other behavioural scientists are working with medical and public health people, both at home and abroad. Their work is usually in multidiscipline action programmes designed for health improvement through attitude change.

A critical look at the characteristic role of the cultural anthropologist on this team makes it evident that he usually serves as a consultant. (This is not to be construed to imply that all cultural anthropologists are working in the capacity of consultants).

Fleck and Ianni, in a recent study of the role of the cultural anthropologist on interdisciplinary action programmes, found out that the anthropologist often does not choose the area of research in which he wishes to work. Sometimes the particular problem under investigation may not be of any interest to him or even a challenge. But in the final analysis its relevance is to applied medicine and not primarily geared toward pushing the frontier of applied anthropology. " As a consequence, direct contributions to the theory and method of social science do not characteristically

emerge from such research "[21].

Furthermore, another drawback in the anthropologist's role as a consultant is that no real learning, other than incidental learning takes place on his part. His real duty is that of supplying to his client certain requested information on the particular culture. It is not suggested that the anthropologist need become an expert in the field of medical science, but it is to be regretted that the health workers usually become more familiar with social science than the anthropologist does with the field of health.

The question now arises—is the anthropologist to work on a project-to-project basis serving as a consultant ? Is his contribution one of supplying the other members of the team, from his experience, with the right trick to do a particular job ? What is the framework in which the anthropologist should operate in the health field in order to allow anthropology to make its maximum contribution ?

Conclusion

Historically anthropologists confined their work to the purely analytical and descriptive study of societies. More recently there has come about a gradual recognition of the need for emphasising the practical aspect as well. Without abandoning the " purely scientific " approach, anthropologists are utilising their knowledge and techniques on practical problems of the social order.

Understanding of the elements of community organisation and social structure has greatly increased in the past few years. Empirical experience in both the social and technological aspects of development programmes is being acquired. However, it must readily be admitted that our understanding of the social aspects of development lags far behind the technological. We do not yet understand what is meant by the oft repeated rule : " health education programmes must be projected against the social, economic, and cultural factors of the people served ". Precisely, how is this determined ? What are the criteria that serve as guidelines on the one hand, and on the other as safeguards against application of wrong methods ?

Health education research in which anthropologists would play a leading role would do much to solve this problem. Much study is needed to pinpoint precisely what are the socio-economic and cultural determinants that make certain health education practices applicable to one group and not to another.

Much could be learned from the successful programme, but even

more may be learned by less successful ones. Thus through an accumulation of such a body of knowledge from all over the world, a fund of information would be developed that would serve as a basis for comparative studies in health education.

Bibliography

[1]Rosen, George. Approaches to the Concept of Sociological Medicine. *Melbank Memorial Fund Quarterly*, **26**, 7-21.

[2]MacIntire, Charles. The Expanse of Sociological Medicine. *Journal of Sociological Medicine*, **16**, 1-3 (Feb.) 1915.

[3]Roemer, Milton J. Relationship of Social Medicine to Social Science. *Journal of the Association of American Medical Colleges*, 23, 324-329 (Sept.) 1948.

[4]Shep, Cecil G., and Taylor, Eugene H. *Needed Research in Health and Medical care*. Chapel Hill : University of North Carolina Press, 1954.

[5]Foster, George M. Use of Anthropological Methods and Data in Planning and Operation. *Public Health Reports*. Vol. 68, No. 9 (Sept.) 1953.

[6]Roney, James, G., Jr. The Place of Anthropology in a Technical Assistance Program. *The Scientific Monthly*. 159-162 (March) 1954.

[7]Paul, Benjamin D. Medicine's Third Dimension. *Journal of the National Medical Association*. Vol. 48, No. 5, 323-325 (Sept.) 1956.

[8]Freeman, Howard E., and Reeder, Joe G. Medical Sociology : A Review of the Literature. *American Sociological Review*. Vol. 22, No. 1 (Feb.) 1957.

[9]Simmons, Leo W. and Wolff, Harold G. *Social Science in Medicine*. Russell Sage Foundation, N.Y., 1954.

[10]Dorolle, Pierre. Ethnology and Health Problems. *Chronicle of the World Health Organisation*. Vol. 7, 1953.

[11]Bailey, Flora L. Suggested Techniques for Inducing Navaho Women to Accept Hospitalization During Childbirth and for Implementing Health Education. *American Journal of Public Health*. 1418-1423 (Oct.) 1948.

[12]Paul, Benjamin, D. The Cultural Context of Health Education. *Symposium Proceedings*, School of Social Work, University of Pittsburgh. 1953.

[13]Cassel, John. Social and Cultural Implications of Food and Food Habits. *American Journal of Public Health*, Vol. 47, No. 6. 732-740 (June) 1957.

[14]Erasmus, Charles J. An Anthropologist Views Technical Assistance. *The Scientific Monthly*. 147-158. (March), 1954.

[15]Jenney, E. Ross and Simmons, Ozzie G. Human Relations and Technical Assistance in Public Health. *The Scientific Monthly*. Vol. 78, No. 6, 365-371 (June) 1954.

[16]Farag, Saleem A., et al. Health Problems of the Waha. *Medical Arts and Sciences*. Vol. 12, Third Quarter, 1958.

[17]Foster, George M. Working with People of Different Cultural Backgrounds. *California's Health*. State Department of Public Health, 15th Jan., 1956.

[18]Wellin, Edward. Cultural Factors in Nutrition. *Nutrition Reviews*. Vol. 13, No. 5, 129-131 (May) 1955.

[19]Paul, Benjamin D. *Health, Culture and Community*. Russell Sage Foundation, New York, 1955.

[20]Foster, George M. Relationships between Theoretical and Applied Anthropology ; A Public Health Programme Analysis. *Human Organisation*. Vol II, No. 3, 5-16 Fall, 1952.

[21]Fleck, A. C., Jr., and Ianni, F.A.J. Epidemiology and Anthropology : Some Suggested Affinities in Theory and Method. *Human Organisation*. Special Issue, Vol. 16, No. 4, 38-40, Winter, 1958.

FLUORIDATION AND THE WATERWORKS ENGINEER

By J. R. COLLINS, A.M.I.C.E., A.M.I.W.E.,
Borough Water Engineer and Manager, Watford.

The fluoridation of public water supplies is primarily a public health matter, but the part which the Waterworks Engineer has to play in the project is vital to its success and safety.

There are few water undertakings which operate without one or another form of treatment, and the water industry has, over the years, become expert in the administration of controlled dosages of various chemicals. The task of adding an accurate dose of fluoride, therefore, presents no unusual problem. Nevertheless, in view of the misleading impressions gained by a few members of the public regarding the introduction of fluorides into a public water supply, the waterworks engineer must make a careful review of his local conditions and plan his installation and its operation with scrupulous care.

In considering a fluoridation project a number of questions will present themselves to the engineer and the most important of these may be summarised as follows :—

(*a*) Which type of dosing apparatus will be most suited to the local conditions ?

(*b*) Can the dosage be maintained within safe and acceptable limits ?

(*c*) What facilities for testing samples will be required ?

(*d*) What are the possible effects of other water treatment processes on the fluoride concentration ?

(*e*) Will the fluoride concentration remain stable in the service reservoirs and in the distribution network of mains and pipes ?

(*f*) Will the presence of fluoride have any adverse effect on industrial processes for which the public water supply is used, e.g. brewing ?

(*g*) Will the handling of fluorides have any adverse effect on

the health of the waterworks staff?

(*h*) What will be the capital and running costs of the project?

I propose to outline in this article some of the answers to these basic questions and to describe the types of fluoridation plant and techniques which have been found satisfactory during the past four years of fluoridation at Watford.

Two types of fluoride dosing plant are being used in the study areas in Britain and one of each has been installed at Watford. Both are simple and easily understood and managed by the operational and maintenance staff of the waterworks, and the plants have shown themselves to be capable of accurately maintaining the required concentration of one part per million of fluorine ion in the supply to the town.

For smaller pumping stations, supplying quantities up to 1¾ or 2 million gallons per day, a plant which injects a controlled quantity of sodium fluoride solution has been employed, and for the larger pumping stations a volumetric feeder which discharges dry sodium silico fluoride powder at a measured rate has given very satisfactory results.

Solution feed apparatus

The solution feed apparatus for the smaller waterworks was developed to utilise the powdered form of sodium fluoride which is available in Britain. This plant consists basically of a large container in which a near-saturated solution of sodium fluoride is continuously prepared, and from which small calibrated feeder pumps draw a rate appropriate to the strength of the solution and the quantity of water to be treated per hour.

The mixing and dissolving chamber is submerged at the bottom of the large container and it is kept charged with an excess of sodium fluoride powder. The powder is thoroughly mixed with soft water by a recirculating pump and the solution flows gently out into the bottom of the large container. It then rises very slowly through a series of baffles to the surface where it is drawn off by the feeder pumps which inject into the main supply.

The solubility of sodium fluoride is practically constant over a wide temperature range and the fluoride solution produced by this plant can be held without difficulty at a steady concentration of 3.5%. The strength of the solution is checked daily by a hydrometer but it varies so little that it is rarely necessary to adjust the rate of operation of the feeder pumps on this account.

The solution in the saturator is perfectly clear when operating

conditions are correct, but, although the upward velocity of flow is very low, there is a possibility of undissolved fluoride rising in suspension to the surface and being taken out by the feeder pumps. To prevent over-dosing occurring from this cause a photo-electric cell is fitted well below the draw-off level and connected to the mixing pump circuit. Should undissolved fluoride be carried up from the mixing chamber into the upper level of the solution container, the resulting turbidity cuts the light beam and stops the mixing pump until the suspended matter has settled. Sight glasses on the solution feeder pumps provide a further check on the clarity of the solution injected.

The water supply to the fluoridator is controlled by a float valve and is specially softened to zero hardness to facilitate dissolving and to prevent the formation of insoluble substances. When fluoride solution is drawn from the top of the vessel an equivalent quantity of fresh water is admitted to the mixing chamber at the bottom, and therefore measurement of the amount of fresh water entering the apparatus provides a check on the quantity of fluoride solution used.

The rate of flow through the fluoridator is low, being only about 5 gallons per hour at the maximum, and therefore accurate measurement of the quantity delivered presented some difficulty. A simple tipping-bucket assembly, delivering a precise volume at each tip, and registering on an electrical counter, has been found to provide the requisite degree of accuracy in measuring the quantity of fresh water supplied to replace the volume of solution withdrawn.

The feeder pumps can be hydraulically controlled so as to operate in proportion to the rate of pumping and the fluoridation plant can be arranged to stop automatically when the pumping station shuts down.

Volumetric feeder

For supplies greater than 2 million gallons per day the plant adopted in Britain is a volumetric feeder developed in the United States of America. This plant, which can be adapted to treat a very wide range of flows, delivers sodium silico fluoride powder from an enclosed hopper. The fluoride must be dry and accurately graded, and is metered as a dry powder which is fed out from the hopper by a horizontal screw which rotates and moves slowly backward and forward.

The fluoride fed out by the screw falls into a continuous-flow

dissolving tank which has a minimum retention time of five minutes and is fitted with a rotating paddle and mixing jets to ensure complete solution of the chemical. The water supply to the dissolving tank should be softened or treated with micromet. The solution from the dissolving tank is continuously drawn off and injected into the supply.

The movement of the feed screw, which controls the rate at which the dry powder is fed out from the hopper, is regulated by a cam-operated clutch, and adjustments to take account of variations in the rate of pumping are automatically made by means of apparatus connected to the output meter of the pumping station.

The feed hopper holds 4 cubic ft. of fluoride and is equipped with slow-moving agitators which prevent arching of the chemical. The hopper outlet in which the feed screw works, is designed to preclude free-flowing of the powder. The hopper and feed mechanism are mounted on a scale which is fitted with a motor-operated counterbalance weight. The motor adjusts the position of the counterbalance weight in accordance with the weight of fluoride removed from the hopper by the feed screw, and the movement made by the motor in maintaining equilibrium is used to operate a loss-of-weight recorder and a cyclometer-type indicator which shows the weight of fluoride remaining in the hopper. The loss-of-weight recorder produces a continuous record on a chart of the rate of application of fluoride. The entire apparatus is enclosed in a dust-proof housing.

Both the plants described above are fairly small, and it is unlikely that difficulty would be found in making space for them within existing waterworks buildings. Dry storage accommodation must be provided for the fluoride stocks, which should preferably be kept under lock and key to prevent accidental misuse of the material.

Testing concentration

A simple colorimetric test for fluorine ion concentration has been found to be well within the capabilities of the pumping station operatives. The results of colorimetric tests have been checked by the distillation method, and have proved to be reliable for all practical purposes. The sample of water to be tested is dechlorinated with sodium arsenite and alizarin zirconium reagent is added to form a lake which is decolourised in the presence of fluorine. The sample is allowed to stand for one hour in a constant temperature bath at 20°C., after which time the strength of the fluorine content is read using a special comparator disc in a Lovibond

Nessleriser. Samples should be taken at the plant and from random points in the distribution system. If testing is carried out on the waterworks premises care must be taken to ensure that samples are not contaminated by chance contact with fluoride dust.

Records of the amount of fluoride applied and the quantity of water treated are required and the concentration of fluorine can be calculated daily from these figures. To prevent possible misapplication of fluoride stocks a quarterly check on the fluorides delivered in bulk compared with the total volume of water treated is also desirable. The plant attendants should fill in a daily record of all fluoridator readings and a complete monthly report should be compiled by the office staff.

It has been found that the safeguards outlined above have been adequate to ensure the maintenance of the optimum concentration of fluorine in the supply under all pumping conditions within remarkably close limits. The possibility of a dangerous overdose may be ruled out, and indeed such difficulties as have so far been encountered in the operation of the plant have usually resulted in slight under-dosing.

There is little possibility of interference with fluoridation arising from other water treatment processes, and recent investigations indicate that fluorides may be applied before coagulation or filtration without significant loss of the chemical.

Tests made on samples of water drawn from the extremities of the distribution system have revealed a stable concentration of fluorine despite the fact that, in parts of Watford, a delay of 48 hours or more can occur before water from the plant arrives at the consumers' taps.

There is no evidence of any build-up of fluoride scale in the mains in Watford, and therefore the possibility of a " feed-back " from a fluoride incrustation can be discounted. Detailed studies carried out in America confirm these observations.

The possibility of fluorides having an adverse affect upon certain industrial processes for which water is used has received careful consideration, but apart from a case in America where the introduction of fluoride resulted in some difficulty in the manufacture of ice (subsequently overcome by the use of ammonium chloride) no troubles have been experienced in this direction. Careful research by brewers and distillers has produced no adverse reports.

Handling of fluorides

The handling of fluoride powders in bulk at the waterworks requires some care on the part of the staff. Each man who is liable to have to handle fluoride in the course of his duties should be provided with an individual respirator of simple design, and with rubber gloves and a smock to be worn when handling the chemical, and kept in a dust-proof cupboard when not in use.

All operators are instructed to wash after handling fluoride, and not to eat when exposed to fluoride dust. Careful handling of fluoride sacks reduces dusting to a very low level, but any accidental spillage should be swabbed up with water, because apart from the hazard to health, loose fluoride dust can cause considerable interference with concentration tests made on site.

Fluorine excretion tests have been made on waterworks plant attendants from time to time, but have revealed nothing to indicate an increase in the fluorine intake of these men. It is therefore safe to say that these simple hygienic precautions, which the staff now perform as a routine, are adequate to safeguard them from any unhealthy exposure to fluoride dust.

Costs

The costs of the treatment are remarkably low. Approximately £1,500 to £2,000 would normally cover the purchase of plant and its installation. Fluoridation with sodium fluoride costs approximately 21s. 9d. in materials per million gallons treated, and with sodium silico fluoride, about 11s. 6d. per million gallons. The all-in cost, including materials, maintenance and depreciation of plant, is working out in Watford at 4½d. per head per annum.

It is interesting to reflect that about a century ago the rapid development of public water supplies was making a significant contribution to the cause of public health. Now, it seems, the water industry is on the threshold of another important contribution to that cause, for although fluoridation of British water supplies is as yet in its infancy, the work already carried out in Watford, Anglesey and Kilmarnock has demonstrated the simplicity, safety and accuracy of the project.

EVOLUTION OF MAN AND HEALTH

By A. J. DALZELL-WARD, M.R.C.S., L.R.C.P., D.P.H.

Dr. René Dubos is an eminent bacteriologist whose researches at the Rockefeller Institute have shed much light on the nature of disease—of tuberculosis in particular. He is also one of our most important medical philosophers. The conclusions to be drawn from his penetrating studies of the evolution of man in association with parasitic organisms are so disturbing to some people that even to quote him is to meet their disapproval. At least this is what appeared from a leading article in *The Medical Officer*, some years ago, in which the writer commented with some severity on the remarks of a colleague—" he quotes Dubos with obvious approval ".

The particular cause of indignation in this case was Dubos' assertion that the decline of tuberculosis had little to do with medicine. To many this is naturally unpalatable, but since then others have said much the same thing—Chalke, in particular, who has recently drawn attention, in his brilliant historical study, to the role of social and demographic factors.

Now Dubos has contributed a major work[1] to the " World Perspectives " series. There are 18 titles in this series and the authors include Walter Gropius, Lewis Mumford, Brock Chisholm and Konrad Adenauer. In her preface the editor, Ruth Nanda Anshen, says it is the thesis of the series that man is in the process of " developing a new awareness which, in spite of his apparent spiritual and moral captivity, can eventually lift the human race above and beyond the fear, ignorance, brutality and isolation which beset it to-day."

An idealistic target indeed, which makes Dr. Dubos' title " Mirage of Health " seem out of step. In fact the main thesis is that life without disease is impossible. Complete freedom from struggle and disease is incompatible with the process of living. However, those who make a thorough study of the book will

[1] *Mirage of Health*, by René Dubos. (George Allen & Unwin, 1960. Pp. 221. Price 21s.)

discover this to be an over-simplification and certainly no counsel for inaction.

The book is really a series of essays—although connected—and it is most profitable to dip into the contents at random. In fact there would be no disadvantage in reading the last essay " Utopias and Human Goals " first. The approach is that of an evolutionist. Man has not changed biologically since the Pleistocene Age, but he has undergone considerable change in his behaviour and social life which has made him into a different creature from this point of view. Unlike other forms of life which have been the passive subjects of evolutionary change, man has adopted an active role and has sought to control his environment and shape it to his own ends. An important factor is human goals which profoundly affect the physical and mental well being.

Literature abounds with descriptions of mythical epochs—Golden Ages, Arcadian Days or Gardens of Eden, in which a simple " natural " state of life and the absence of strife and competition were believed to create perpetual youth and health. Dr. Dubos dismisses such illusions. A paradise is static, but life is dynamic and existence free from stress is an idle dream. Nevertheless, primitive peoples comfort themselves with the myth of a former idyllic existence, while men in civilised societies rationalise similar desires with philosophical theories.

It is true that a few societies have been able to preserve the static character which is essential for paradise. Insect societies have remained unchanged for 50 million years by the organisation of a rigid structure of intense specialism. Polynesian societies have done the same and although they have appealed to some travellers—probably as a relief from the competitive societies of their own countries—they disgusted D. H. Lawrence, who saw through the glamour to the reality of the boredom and emasculation which was the core of their structure.

Therefore, says Dubos, change and struggle are essential conditions of life. This change and struggle characterises ecological systems which are essentially unstable. The adaptation between micro-organism and host is effective only for the precise circumstances under which adaptation evolved. This means " physiological normalcy " and surely emphasises the need for a greater concentration of interest in the normal homoeostatic mechanisms. Traditional public health policy has always been to make the environment fit the man. Are there limitations here, and can there be circumstances in which we shall have to help man

adapt to the environment? Are the "precise circumstances" in which adaptation originally occurred still present? Our policies have always been mainly defensive and although it would not be fair to say that the promotion of dynamic qualities has received no attention, there has been a tendency to allow them to look after themselves.

However, there will be widespread agreement with Dubos' views on the role of drugs in the eradication of disease, though we must remember that the anti-malarials have been indispensable in eradication campaigns when combined with environmental measures. Dubos' imagery is fascinating when he likens the physician to the hero of a Western who gallops through a town, shooting up all the desperados—to pass on unaware that the social conditions prevailing will allow others to come in.

Throughout the book, man is seen as one part of a complicated, essentially interdependent process of evolution. Whatever happens to one organism produces a change in another—therefore those changes which produce disease will occur inexorably in one form or another. But, fortunately for his biological and social future, man has in reserve a large store of unspecialised tissue cells and there may be potentialities in his brain which will still permit him to evolve adaptively and to achieve fitness in many unexpected situations.

Here Dubos leaves the door open. As he shows himself, a great many diseases have disappeared as a result of social progress. Civilised communities have conquered the dangerous infectious diseases of childhood. The infant mortality rates of Israel and Cyprus are in sharp contrast with those of their neighbours who have the same climate and potential risks. Epidemiological research is throwing more and more light on the causation of the non-communicable diseases and we have suggestions for the prevention of cancer in three sites.

We are continually reminded that infecting organisms undergo evolutionary changes in virulence. The streptococcus was mild in the 18th century and malignant in the 19th century. To-day the staphylococcus has staged a dramatic comeback. But does not the doctrine of "precise circumstances" apply also to micro-organisms? When the streptococcus struck the crowded, poverty-stricken population in the 19th century it had ideal conditions. Those conditions no longer obtain. The staphylococcus will be daunted by the washing machines, detergents, paints, polishes and toilet preparations of the 20th century. Because health has now

been achieved by medical techniques alone, is this any cause for gloom? Similarly, need one be downcast by the disillusionment concerning the Golden Ages? Of one thing we may be certain, our Golden Age will be achieved by sophistication rather than primitive and glorious savagery.

A reviewer must avoid the temptation to summarise a work of this nature in trite and conventional terms of eulogy. I will content myself by saying that all who wish to be abreast of modern thought will have to read it—and that this will be an enjoyable process.

THE PHYSICAL HEALTH OF CHILDREN, by Audrey Kelly. (Penguin Handbook. 1960. Pp. 256. Price 3s. 6d.).

This is an interesting book, though I doubt if it will be accepted by all clinic mothers. Surely "enunciate", "altercation", and "eructate" are not words Dr. Kelly actually uses. There is a lot of good sensible and practical advice, though I would differ with her on several small points. As the Ministry of Health has not agreed to the universal use of triple antigens for immunising infants, it is a great pity that there is no mention of programmes using separate antigens. Similarly, the comments on polio immunisation are brief and unsatisfying in 1960. Could we not recommend keeping a record of immunisations —especially since A.T.S. is advocated for dirty cuts, and no mention is made of the risks that may be involved after such injections. It is also a pity that we are not reassured that drug-induced deafness in curing tuberculous meningitis is unlikely with modern drugs. Again, we are told that once having had an affected Rhesus baby, things will always get worse. The same importance is attached to rare diseases, e.g. congenital heart disease and hydrocephalus, without any idea of the incidence being given. And lastly, though we may agree that Mother bears the brunt of worrying and doing for children, Father seems to be forgotten

D. SASIENI.

NOW THAT YOU'RE GROWING UP. (12-page booklet available free of charge from Johnson & Johnson, Slough, Bucks. Also distributed through chemists, clinics, etc.)

This attractively designed booklet for girls of 10-16 explains in simple terms the biological changes that take place in adolescent girls and gives hints on personal hygiene, with particular reference to menstruation.

THE EFFECTS OF POLLUTION ON LIVING MATERIAL, edited by W. B. Yapp. (Symposia of the Institute of Biology No. 8. 1959. Pp. 154. Price 25s.)

Anyone connected with or interested in public health will find this book fascinating. It is in fact the report of the 8th Symposium of the Institute of Biology, which was devoted to the pollution of air and water and the effects on living material.

Papers and discussions on the general condition of the rivers in Britain and the biological effects of their pollution, together with results of surveys carried out on water in the Thames Estuary, form the first half of the symposium. Prof. Newell's contribution describing the effects of pollution on the abundance of animals in estuaries is particularly interesting.

Air pollution, including that caused by diesel exhausts, and some of the chemical and physical effects on living material are described. The effect of air pollution on plant growth, and on Man, and fluorosis in farm animals are amongst other subjects discussed.

The concluding part of the Symposium is concerned with radioactivity. Mention is made in the first part of the book of radioactive pollution of water, but the safe disposal and handling of radioactive wastes is considered in a paper by Mr. R. H. Burns. The effect of fission products in plants and aquatic organisms, and the genetic effects of radioactive pollution are described.

Throughout the book one is conscious of the importance of the biological effects of pollution and the necessity for further research in this field.

R. D. PEARCE.

Printed in Great Britain by Jordison & Co. Ltd., London & Middlesbrough.